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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,510	02/12/2004	Cheng-Chieh Liu	0941-0913P	3680
2292	7590	07/11/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			DUDA, RINA I	
PO BOX 747			ART UNIT	
FALLS CHURCH, VA 22040-0747			PAPER NUMBER	
			2837	

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/776,510	<b>Applicant(s)</b> LIU ET AL.	
	<b>Examiner</b> Rina I. Duda	<b>Art Unit</b> 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 4/17/06 have been fully considered but they are not persuasive. In reference to applicant's argument that Cheng does not teach a control element for adjusting a first voltage of the thermal sensor Rth to change a rotation speed and temperature range of the fan, the thermal resistor Rth has different resistances depending on the temperature so the first voltage across RTh varies with respect to temperature, said first voltage is inputted to control element IC31 where said first voltage is compared to a Vref (obtained from voltage divider between R9/R10) and an output voltage Vo is sent to TR1 where said variable output Vo causes the collector current of TR1 to change accordingly, changing the speed of the fan. Therefore, the rejection stands because the control elements of Cheng adjust the first voltage as recited in claims 1 and 14-17.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Cheng (US patent 5197858).

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Claims 1 and 2, Cheng describes a variable speed fan comprising a thermal sensor  $R_{th}$  detecting an environmental temperature of the fan; a driving element IC2 driving the fan (L1-L4) to a specific speed based on the detected temperature; and control elements such as IC31/TR1/TR2 connected between the temperature sensor and the driving element for changing the rotation of the fan by adjusting the first voltage across  $R_{th}$ .

Claim 3, Cheng describes a driving element including hall IC1 and integrated circuit IC2.

Claim 4, Cheng describes a switch circuit including transistors TR1 and TR2 as part of control element.

Claim 5, Cheng describes a switch circuit including comparator IC31, transistors TR1/TR2 and resistors such as  $R_a/R_b$ .

Claim 6, Cheng describes resistor  $R_9$  connected in parallel with thermal sensor  $R_{th}$  for adjusting the reference voltage which will be used to determine the desired speed.

Claim 7, Cheng describes resistor  $R_4$  connected in series with thermal sensor  $R_{th}$  for controlling the voltage inputted to IC31 which will varied the speed of the fan.

Claim 8, Cheng describes comparator IC31 for subtracting the voltage from the thermal sensor from the reference voltage.

Claim 9, Cheng describes operational amplifier IC31 for comparing the  $V_{th}$  to  $V_{ref}$  and at least four resistors connected to it as shown in figure 2.

Claim 10, Cheng describes resistor R4/R9/R10 generate a second voltage  $V_{ref}$  in order to adjust a third voltage  $V_o$  outputted to the driving circuit for controlling the speed of the fan.

Claim 11, Cheng describes a control element comprising a voltage divider using resistor R9/R10, a comparator IC31 and an output circuit including resistor  $R_a/R_b$  and transistors TR1 and TR2.

Claims 12 and 13, Cheng describes in figure 2 and corresponding description how the reference voltage  $V_{ref}$  is constantly compared to  $V_{th}$ , the resulting signal is used to adjust the speed of the fan.

Claim 14, Cheng describes a motor speed controller comprising a thermal sensor  $R_{th}$ , a driving circuit IC2 and a control element connected between the sensor and the driving circuit, wherein the control element includes a switch circuit including transistors TR1/TR2 and a resistor R9 connected in parallel to the sensor for adjusting the speed of the fan.

Claim 15, Cheng describes a motor control system comprising a thermal sensor  $R_{th}$ , a driving circuit IC2 and a control element connected between the sensor and the driving circuit including a resistor R4 connected in series to the thermal sensor for controlling the speed of the fan.

Claim 16, Cheng describes a motor speed controller comprising a thermal sensor  $R_{th}$ , a driving element IC2, and a control element connected between IC2 and the thermal sensor including a subtract or IC31 and three resistor R4/R9/R10 for adjusting the speed of the fan.

Claim 17, Cheng describes a motor speed controller comprising a thermal sensor RTh, a driving element IC2, and a control element connected between the thermal sensor and the driving element which regulates the voltage outputted to the driving circuit by comparing a reference voltage to the voltage across the thermal sensor wherein said voltage will control the speed of the fan.

***Conclusion***

**4. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


**5.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rina I. Duda whose telephone number is 571-272-2062.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached at 571-272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RD

  
RINA BUDA  
PRIMARY EXAMINER